



Practitioner's Docket No. U 013698-2

PATENT

AF 1753
JFw

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

application of: Kazuaki WATANABE, et al
Serial No.: 10/001,256 Group No.: 1755
Filed: November 2, 2001 Examiner.: Callie E. Shosho
For: INK COMPOSITION FOR INK JET PRINTER

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF (PATENT APPLICATION—37 C.F.R. 1.192)

NOTE: The phrase "the date on which" an "appeal was taken" in 35 U.S.C. 154(b)(1)((A)(ii) (which provides an adjustment of patent term if there is a delay on the part of the Office to respond within 4 months after an "appeal was taken") means the date on which an appeal brief under § 1.192 (and not a notice of appeal) was filed. Compliance with § 1.192 requires that: 1. the appeal briefee (§ 1.17(c)) be paid (§ 1.192(a)); and 2. the appeal brief complies with § 1.192(c)(1) through (c)(9). See Notice of September 18, 2000, 65 Fed. Reg. 56366, 56385-56387 (Comment 38).

1. Transmitted herewith, in triplicate, is the APPEAL BRIEF in this application, with respect to the Notice of Appeal filed on June 28, 2004.

NOTE: "Appellant must, within two months from the date of the notice of appeal under § 1.191 or within the time allowed for reply to the action from which the appeal was taken, if such time is later, file a brief in triplicate...." 37 CFR 1.192(a) (emphasis added)

2. STATUS OF APPLICANT

This application is qualified as

other than a small entity.
 a small entity.

CERTIFICATE OF MAILING/TRANSMISSION (37 C.F.R. 1.8(a))

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Date: September 10, 2004

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110.00 OP

3. FEE FOR FILING APPEAL BRIEF

Pursuant to 37 C.F.R. 1.17(c), the fee for filing the Appeal Brief is:

<input type="checkbox"/> small entity	\$165.00
<input checked="" type="checkbox"/> other than a small entity	\$330.00
	Appeal Brief fee due \$ <u>\$330</u>

4. EXTENSION OF TERM

NOTE: 37 C.F.R. § 1.704(b)"... an applicant shall be deemed to have failed to engage in reasonable efforts to conclude processing or examination of an application for the cumulative total of any periods of time in excess of three months that are taken to reply to any notice or action by the Office making any rejection, objection, argument, or other request, measuring such three-month period from the date the notice or action was mailed or given to the applicant, in which case the period of adjustment set forth in § 1.703 shall be reduced by the number of days, if any, beginning on the day after the date that is three months after the date of mailing or transmission of the Office communication notifying the applicant of the rejection, objection, argument, or other request and ending on the date the reply was filed. The period, or shortened statutory period, for reply that is set in the Office action or notice has no effect on the three-month period set forth in this paragraph."

NOTE: The time periods set forth in 37 C.F.R. 1.192(a) are subject to the provision of § 1.136 for patent applications. 37 C.F.R. 1.191(d). See also Notice of November 5, 1985 (1060 O.G. 27).

NOTE: As the two-month period set in § 1.192(a) for filing an appeal brief is not subject to the six-month maximum period specified in 35 U.S.C. 133, the period for filing an appeal brief may be extended up to seven months. 62 F.R. 53131, at 53156, October 10, 1997.

The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply.

(complete (a) or (b), as applicable)

(a) Applicant petitions for an extension of time under 37 C.F.R. 1.136 (fees: 37 C.F.R. 1.17(a)(1)-(5)) for the total number of months checked below:

<input checked="" type="checkbox"/> Extension <u>(months)</u>	Fee for other than <u>small entity</u>	Fee for <u>small entity</u>
one month	\$ 110.00	\$ 55.00
two months	\$ 420.00	\$210.00
three months	\$ 950.00	\$475.00
four months	\$1,480.00	\$740.00
five months	\$2,010.00	\$1,005.00

Fee \$ 110

If an additional extension of time is required, please consider this a petition therefor.

(check and complete the next item, if applicable)

An extension for _____ months has already been secured, and the fee paid therefor of \$ _____ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$ _____

or

(b) [] Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

5. TOTAL FEE DUE

The total fee due is:

Appeal brief fee \$ 330
Extension fee (if any) \$ 110

TOTAL FEE DUE \$ 440

6. FEE PAYMENT

[X] Attached is a check in the sum of \$ 440.
[] Charge Account No. 12-0425 the sum of \$ _____.

A duplicate of this transmittal is attached.

7. FEE DEFICIENCY

NOTE: If there is a fee deficiency and there is no authorization to charge an account additional fees are necessary to cover the additional time consumed in making up the original deficiency. If the maximum six-month period has expired before the deficiency is noted and corrected, the application is held abandoned. In those instances where authorization to charge is included, processing delays are encountered in resuming the papers to the PTO Finance Branch in order to apply these charges prior to action on the cases. Authorization to change the deposit account for any fee deficiency should be checked. See the Notice of April 7, 1986, 1065 O.G 31-33.

[x] If any additional extension and/or fee is required, this is a request therefor and to charge Account No. 12-0425

AND/OR

[x] If any additional fee for claims is required, charge Account No. 12-0425.

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SIGNATURE OF PRACTITIONER

CLIFFORD J. MASS

(type or print name of practitioner)

P.O. Address

c/o Ladas & Parry LLP
26 West 61st Street
New York, N.Y. 10023



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Kazuaki WATANABE, et al
Serial No.: 10/001,256 Group No.: 1755
Filed: November 2, 2001 Examiner.: Callie E. Shosho
For: INK COMPOSITION FOR INK JET PRINTER

Attorney Docket No.: U 013698-2

Commissioner for Patents
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Alexandria, VA 22313-1450

APPELLANT'S BRIEF

This brief is in furtherance of the Notice of Appeal filed in this case on June 30, 2004. The fees required under 37 CFR 1.17, and any required petition for

CERTIFICATION UNDER 37 C.F.R. 1.8(a) and 1.10*
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extension of time for filing the brief and fees therefor, are dealt with in the accompanying Transmittal of Appeal Brief.

This brief is submitted in triplicate and contains the following items under the following headings, and in the order set forth:

- I. Real Party in Interest
- II. Related Appeals and Interferences
- III. Status of Claims
- IV Status of Amendments
- V Summary of Invention
- VI Issues
- VII Grouping of Claims
- VIII Arguments
- IX Appendix of Claims Involved in the Appeal

The final page of this brief bears the practitioner's signature.

I REAL PARTY IN INTEREST

The real party in interest is Seiko Epson Corporation of Tokyo Japan, the assignee of the entire right, title and interest in this application.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims pending in application: 1, 3-5 and 8-10.

Claims allowed: None.

Claims objected to: 4.

Claims rejected: 1, 3, 5 and 8-10.

Claims canceled: 2, 6 and 7.

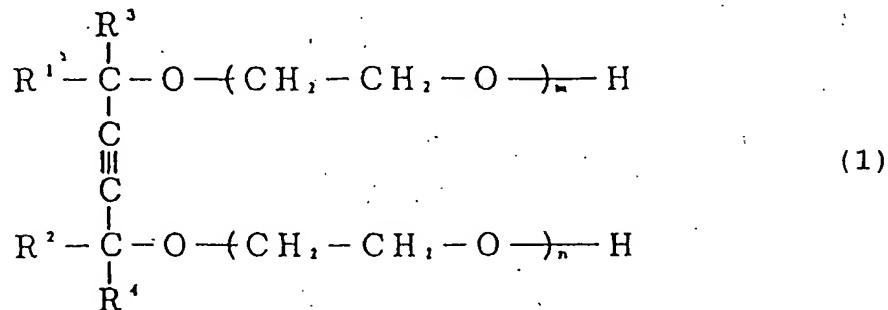
Claims on Appeal: 1, 3, 5 and 8-10.

IV. STATUS OF AMENDMENTS

The Examiner has courteously entered the Amendment After Final filed May 10, 2004 and has indicated that it overcomes the 35 USC 112, second paragraph rejection of claim 5, but did not overcome the 35 USC 103 rejection of claims 1, 3, 5 and 8-10.

V. SUMMARY OF INVENTION

In its broadest embodiment the invention is an aqueous ink composition comprising at least water, a first polymer, a second polymer or copolymer which is a sulfonyl group-containing (co) polymer, a pigment dispersed by the first polymer, and an ultra-penetrating agent, wherein the sulfonyl group-containing (co) polymer is present in the form of an emulsion, and wherein the ultra-penetrating agent is a combination of a compound represented by the following formula (1) and triethylene glycol monobutyl ether:



wherein, $0 \leq m + n \leq 50$, and R^1 , R^2 , R^3 and R^4 each independently is an alkyl group.

The recited combination of components provide the ink composition with desirable properties, including an ability to form print that has an improved gloss and a reduction in gloss differential (a phenomenon wherein a difference in reflectance of different print duties is observable). This is shown by the evidence of record in the specification and in the declaration under 37 CFR 1.132 of record as follows.

Ink Sets A-F were prepared as described in the specification at pages 29 to 32,

and Ink Set G was prepared as described in the Declaration of Kazuaki Watanabe filed November 12, 2003. Each of ink sets A-E comprises a yellow ink composition, a magenta ink composition and a cyan ink composition having the claimed components, including a pigment dispersed by a dispersant resin (the first polymer), an emulsion comprising a sulfonyl group-containing polymer (Emulsion 1, Emulsion 2 or Emulsion 3- -see specification at pages 25-28) and the ultra-penetrating agent comprising a combination of triethylene glycol monobutyl ether and the compound of formula (1). (Note: Surfynol 104 and Surfynol TG are compounds of formula (1), as described in the specification at page 22, last full paragraph.)

As described in the table on page 3 of the declaration of Kazuaki Watanabe, Ink Set F is the same as Ink Set A with the exception that it does not contain the emulsion, and Ink Set G is the same as Ink Set A except that the claimed ultrapenetrating agent was replaced with diethylene glycol monobutyl ether (the closest compound to the claimed ultrapenetrating agent described in the closest prior art reference, JP 11217525). The declaration shows that the claimed Ink Set A is superior to one or both of the comparative Ink Sets in the evaluations tested, including cohesion differential, gloss differential, glossiness, bronzing, fixing ability and ejection stability. (Note: the evaluation criteria are described in the specification at pages 32 to 35.)

VI ISSUES

Whether claims 1, 3 and 8-10 are unpatentable over JP 11217525 in view of Sano et al (U.S. Patent 5,769,930); and whether claims 1, 3 and 8-10 are unpatentable over Anton et al (U.S. Patent 5,912,280) in view of Sano et al (U.S. Patent 5,769,930).

VII GROUPING OF CLAIMS

Claims 4 and 5 do not stand or fall with claims 1, 3 and 8-10 because they have not been rejected over the cited art. The Examiner has courteously acknowledged the allowability of claim 4 if rewritten in independent form including all of the limitations of the base claim and any intervening claims (Office Action of January 29, 2004 at paragraph 9). The Examiner has not acknowledged the allowability of claim 5, although the prior art has not been applied against this claim (see Office Action of January 29, 2004 at paragraphs 5 and 6).

VIII ARGUMENTS

A. Rejection Under 35 USC 103 over JP 11217525 in view of Sano et al

1. The Cited References Do Not Establish a *Prima Facie* Case of Obviousness

As discussed in Section V *supra*, the claimed ink composition comprises a combination of components, including a sulfonyl group containing polymer emulsion and an ultrapenetration agent, which provide the claimed ink composition with desirable properties such as improved gloss and reduced gloss differential. As acknowledged by the Examiner at paragraph 5 of the Official Action of January 29, 2004, the primary reference, JP 11217525, does not describe the claimed ultrapenetrating agent. The Examiner relies upon the secondary reference, Sano et al, for a description of a penetrating agent that is a combination of acetylene glycol and triethylene glycol monobutyl ether and contends that it would have been obvious to use this penetrating agent in the ink composition described in JP 11217525.

Applicants respectfully disagree.

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings (see MPEP Section 706.02(j)). It is respectfully submitted that the Examiner has not pointed to a motivation, either in the references themselves or in the prior art generally, to combine the references in the manner suggested; the Official

Action of January 29, 2004 merely notes that both the primary reference and the secondary reference are drawn to ink jet inks. However, it is respectfully submitted that this, in and of itself, is not sufficient to provide the required motivation where, as here, the secondary reference does not teach, and in fact teaches away from, the efficacy of using the claimed ultrapenetrating agent in ink jet inks generally.

In this respect, Appellants respectfully call attention to Sano et al at column 1, lines 17-29 and the paragraph bridging columns 1 and 2, wherein the reference teaches the importance of (a) reducing the penetration of ink into a recording medium to enhance coloring properties ("In general, in order to enhance the coloring properties, it is preferred to inhibit the penetration of the ink."); and (b) maintaining a balance between the enhancement of coloring properties and the inhibiting of color bleeding. Sano et al teach that such balance must be struck by providing an ink composition with an alginate that can prevent the ink composition from penetrating into the recording medium so as to eliminate color bleeding while improving coloring properties (see Sano et al paragraph bridging columns 5 and 6). Sano et al also teach, in the Examples described therein, that a preferred optical density value of a print formed with the Sano et al ink is dependent on the presence of the alginate. See Sano et al at column 17, line 56 to column 18, line 2 and Table 1, wherein it is shown that the optical density value of the print increased, generally by not less than 5%, by virtue of the presence of the alginate.

The above teachings in Sano et al make clear that the penetrating agents

described therein are designed **specifically** for use with the described ink compositions, wherein the other described components, including the alginate, mitigate the effects of the ultrapenetrating agent. Sano et al do not provide a motivation for using the claimed ultrapenetrating agent in an ink jet ink generally and, in fact, teach away from this by cautioning that the coloring properties of a recorded image can be enhanced by **reducing** the penetration of an ink not comprising the alginate. Accordingly, it is respectfully submitted that there would have been no motivation in the prior art to combine the references as suggested by the Examiner, and that the references cannot be relied upon to set forth even a *prima facie* case of alleged obviousness.

2. The Evidence of Record is Sufficient to Rebut Any Alleged *Prima Facie* Case

Even assuming for the sake of argument that the references were sufficient to set forth a *prima facie* case of alleged obviousness, it is respectfully submitted that the evidence of record (discussed in Section V, *supra*) would be sufficient to rebut such *prima facie* case. In particular, the Declaration of Kazuaki Watanabe shows the advantageous results that can be achieved with the claimed ink composition as compared with the ink composition of the primary reference, JP 11217525 (see Watanabe Declaration at table on page 3 and discussion in Section V, *supra*).

The declaration shows that an ink set comprising the claimed ink

compositions having the recited ultrapenetrating agent performed better in the evaluations for cohesion differential, gloss differential, glossiness and ejection stability than the ink set of Comparative Example G, which has the same components with the exception that diethylene glycol monobutyl ether is substituted for the claimed ultrapenetrating agent. (Note: diethylene glycol monobutyl ether is described in the primary reference at paragraph [30].)

The declaration also shows that an ink set comprising the claimed ink compositions and having the recited emulsion of a sulfonyl group-containing polymer performed better in the evaluations for cohesion differential, gloss differential, glossiness, bronzing and fixing ability than the ink set of Comparative Example F, which has the same components but without the emulsion.

The results in the declaration establish the criticality of the use in the claimed composition of the claimed emulsion in combination with the claimed ultrapenetrating agent to improve properties such as gloss and gloss differential. These results could not have been expected from the prior art since the primary reference does not show or suggest the claimed ultrapenetrating agent and the secondary reference suggests the use of the claimed ultrapenetrating agent only in combination with the ink composition described therein (see discussion above). Accordingly, it is respectfully submitted that the results are unexpected and would be sufficient to rebut the alleged *prima facie* case of obviousness based on the cited art even assuming for the sake of argument that the cited art were sufficient to set forth a *prima facie* case.

The Examiner has not disputed that the improved properties shown in the declaration could not have been expected from the cited references, but has maintained the rejection on the basis that such improved properties would be intrinsic in an ink that is formed from a combination of the primary and secondary references (see Attachment to Advisory Action, mailed June 1, 2004, at paragraph bridging pages 2 and 3). However, it is respectfully submitted that, whether an ink formed by combining references would have had such properties is not a relevant inquiry. There was no such ink in the prior art; the ink described in the primary reference did not include the claimed ultrapenetrant and the ink described in the secondary reference did not include, *inter alia*, the claimed emulsion. It is respectfully submitted that it is improper to dismiss rebuttal evidence of improved properties on the basis that such properties would have been intrinsic in a composition that did not exist in the prior art.

In every case in which there is a *prima facie* obviousness rejection based upon a combination of references, there must be a motivation or suggestion to combine the references and the combined references must teach or suggest all of the claim limitations (see MPEP 706.02(j)). Since, in every such *prima facie* case, the combined references would show all of the claim limitations, under the rationale advanced by the Examiner there would never be a situation in which rebuttal evidence of unexpected results could be used to overcome a *prima facie* case. This rationale is clearly inconsistent with the case law which provides that rebuttal evidence of unexpectedly advantageous results is probative of nonobviousness (see, e.g., *In re*

Soni, 34 USPQ 2d 1684, 1688 (Fed. Cir. 1995)), and that a declaration need (only) compare the claimed subject matter with the closest prior art reference (and not with the combined teachings of all prior art references) to rebut a *prima facie* case of obviousness. E.g., *In re Burckel*, 201 USPQ 67 (CCPA 1979).

In view of the above, it is respectfully submitted that (a) the cited references are not properly combinable to set forth even a *prima facie* case of alleged obviousness, and (b) even if they were, the evidence of record would be sufficient to overcome such *prima facie* case.

B. Rejection under 35 USC 103 Over Anton et al (US Patent 5,912,280) in View of Sano et al

1. The Cited References Do Not Set Forth a *Prima Facie* Case of Obviousness

These cited references do not set forth a *prima facie* case of obviousness for the same reasons as provided in Section VIII(a)(1) *supra* with respect to the rejection considered therein. Moreover, the primary reference in the present rejection, Anton et al, teaches that, although surfactants may be used to alter surface tension, as well as to maximize penetration, "the type of surfactants and the amounts used need to be carefully selected to avoid pigment dispersion destabilization or to negate the benefits

of the present inks" (Anton et al at column 8, lines 42-46). Since one of the benefits of the Anton et al inks is high optical density (Anton et al at column 2, lines 10-13) and since, as discussed above, the secondary reference teaches that the optical density of the ink described therein would not be optimal in the absence of the alginate in that ink, the teachings in Anton et al further buttress Appellants' argument that the prior art does not provide a motivation to use the ultrapenetrant described in Sano in other inks. In the absence of such motivation, the references do not set forth even a *prima facie* case of obviousness (see MPEP Section 706.02(j)).

2. The Evidence of Record is Sufficient to Rebut Any Alleged *Prima Facie* Case

Even assuming for the sake of argument that the cited art did set forth a *prima facie* case of obviousness, the evidence of unexpectedly advantageous results of record would be sufficient to overcome any such *prima facie* case for the reasons discussed in Section VIII(A)(2), *supra*. Since only the primary reference (JP 11217525) considered in Section VIII(A) *supra* contains a compound that even arguably has a similarity to the claimed penetrating agent, the JP reference should be considered as the closest prior art and the arguments provided above as to the sufficiency of the rebuttal evidence is *a fortiori* applicable to the present rejection.

In view of the above, it is respectfully submitted that (a) the cited references are not properly combinable to set forth even a *prima facie* case of alleged

obviousness, and (b) even if they were, the evidence of record would be sufficient to overcome such *prima facie* case. Accordingly, it is respectfully submitted that the decision of the Examiner should be reversed and that all claims presently of record should be allowed.

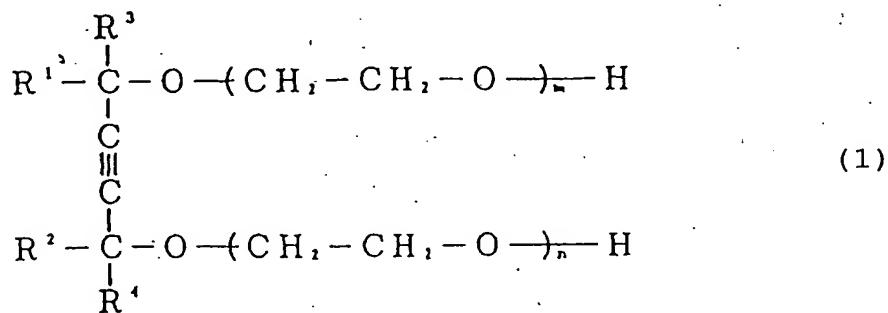
Respectfully submitted,

CLIFFORD J. MASS
LADAS & PARRY
26 WEST 61ST STREET
NEW YORK, NEW YORK 10023
REG. NO.30,086(212)708-1890

IX APPENDIX OF CLAIMS

The text of the claims involved in this appeal are:

Claim 1 An aqueous ink composition comprising at least water, a first polymer, a second polymer or copolymer which is a sulfonyl group-containing (co) polymer, a pigment dispersed by the first polymer, and an ultra-penetrating agent, wherein the sulfonyl group-containing (co) polymer is present in the form of an emulsion, and wherein the ultra-penetrating agent is a combination of a compound represented by the following formula (1) and triethylene glycol monobutyl ether:



wherein, $0 \leq m + n \leq 50$, and R^1 , R^2 , R^3 and R^4 each independently is an alkyl group.

Claim 3 The aqueous ink composition according to claim 1, wherein the sulfonyl group-containing (co) polymer is at least one of a diene-based, sulfonyl group-containing (co) polymer and a non-diene-based, sulfonyl group-containing (co) polymer.

Claim 5 The aqueous ink composition according to claim 4, wherein the pigment dispersed by the first polymer is a pigment dispersed in an aqueous medium by an acrylic (co) polymer having an acid value of 100 or more.

Claim 8 A recording process comprising recording an image by an ink jet recording process using an aqueous ink composition according to claim 1.

Claim 9 An ink cartridge containing an aqueous ink composition according to claim 1.

Claim 10 (original) A recorded article having an image recorded by an aqueous ink composition according to claim 1.